



Arkansas Comprehensive Testing, Assessment, and Accountability Program

Released Item Booklet

Benchmark Examination Grade 5

**April 2007
Administration**

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Arkansas Department of Education

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PART I Overview—2007 Benchmark Grade 5

The criterion-referenced tests implemented as part of the **Arkansas Comprehensive Testing, Assessment, and Accountability Program (ACTAAP)** are being developed in response to Arkansas Legislative Act 35, which requires the State Board of Education to develop a comprehensive testing program that includes assessment of the challenging academic content standards defined by the Arkansas Curriculum Frameworks.

As part of this program, all Grade 5 students in Arkansas public schools participated in the *Grade 5 Benchmark Examination* in April 2007.

This *Released Item Booklet* for the *Grade 5 Benchmark Examination* contains test questions or items that were asked of students during the April 2007 operational administration. The test items included in Part II of this booklet are those items that contributed to the student performance results for that administration.

Students were given between two and three hours each day to complete assigned test sessions during the four days of testing in April 2007. Students were permitted to use a calculator for the Mathematics items (both multiple-choice and open-response), with the exception of questions 1–8 in this *Released Item Booklet* (items 1–10 in the test booklet). Students were also supplied with a reference sheet to be used during the Mathematics sessions so that all students would have equal access to this information during testing. (See the reference sheet on page 25 of this booklet.) All of the Mathematics, Reading, Writing, and Science multiple-choice items within this booklet have the correct response marked with an asterisk (*). The open-response questions for Mathematics, Reading, and Science, and the two essay prompts for Writing are listed with scoring guides (rubrics) immediately following. These rubrics provide information on the scoring model used for each subject, with the scoring model for Writing defining the overall curricular and instructional link for that subject with the Arkansas *English Language Arts Curriculum Framework*. The domain scoring model, implemented within Arkansas for a number of years, illustrates the appropriate instructional approaches for Writing within the state.

The development of the *Grade 5 Benchmark Examination* was based on the Arkansas Curriculum Frameworks. These frameworks have common distinct levels: *Strands* to be taught in concert, *Content Standards* within each Strand, and *Student Learning Expectations* within each Content Standard. Abridged versions of the Arkansas *Mathematics Curriculum Framework*, Arkansas *English Language Arts Curriculum Framework—Reading Strand*, Arkansas *English Language Arts Curriculum Framework—Writing Strand*, and Arkansas *Science Curriculum Framework* can be found in Part III of this booklet. It is important to note that these abridged versions list only the predominant Strand, Content Standard, and Student Learning Expectation associated with each item. However, since many key concepts within the Arkansas Curriculum Frameworks are interrelated, in many cases there are other item correlations or associations across Strands, Content Standards, and Student Learning Expectations.

Part III of the *Released Item Booklet* also contains a tabular listing of the Strand, Content Standard, and Student Learning Expectation that each question was designed to assess. The multiple-choice and open-response items found on the *Grade 5 Benchmark Examination* were developed in close association with the Arkansas educational community. Arkansas teachers participated as members of Content Advisory Committees for each subject area, providing routine feedback and recommendations for all items. Part III of the *Released Item Booklet* provides Arkansas educators with specific information on how the *Grade 5 Benchmark Examination* items align or correlate with the Arkansas Curriculum Frameworks to provide models for classroom instruction.

CALCULATOR NOT PERMITTED—ITEMS 1–8

1. Ethan is inviting 6 of his friends to a party. He is purchasing toy cars for \$0.98 each as party gifts. Which equation shows how much Ethan will spend on party gifts? Let m represent the amount of money.

A. $6 + \$0.98 = m$
 B. $\$0.98 \div 6 = m$
 C. $\$0.98 - 6 = m$
 * D. $6 \times \$0.98 = m$

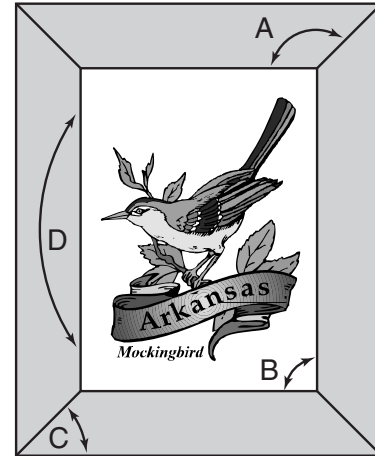
2. Lucy bought a can of juice and a snack bar for a total of \$2.50. If g represents the cost of the snack bar, which expression shows the cost of the juice?

A. $g + \$2.50$
 B. $g - \$2.50$
 C. $\$2.50 + g$
 * D. $\$2.50 - g$

3. Which of the following would **best** be measured in linear yards?

A. the area of a gym
 * B. the length of a hallway
 C. the length of a paper clip
 D. the distance from a star to Earth

4. Which angle represents a straight angle in the framed picture below?



A. $\angle A$
 B. $\angle B$
 C. $\angle C$
 * D. $\angle D$

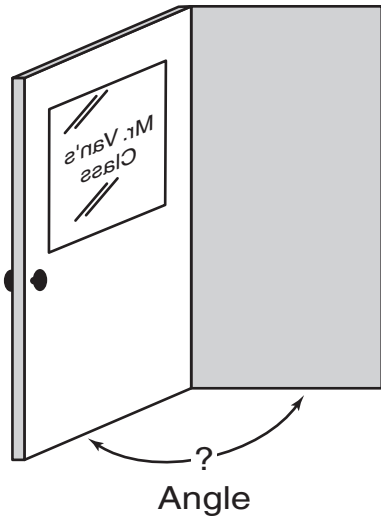
5. Ming needs \$56.64 to buy a bicycle. She has \$25. If m represents how much more money Ming needs, which equation should be used to find the correct value of m ?

A. $m + \$56.64 = \81.64
 * B. $\$56.64 - \$25.00 = m$
 C. $\$25.00 - m = \56.64
 D. $\$25.00 + \$56.64 = m$

6. Which of the following numbers shows a 7 in the tenths place?

* A. 5.74
 B. 57.4
 C. 7.45
 D. 74.5

7. Mr. Van asked his students to identify the type of angle formed by the open classroom door, as shown below.



What type of angle is the open door showing?

A. right angle
 B. acute angle
 * C. obtuse angle
 D. straight angle

8. Rita painted the 6 faces of a cube with the following patterns:

1 face has dots:



2 faces have stripes:



3 faces have triangles:

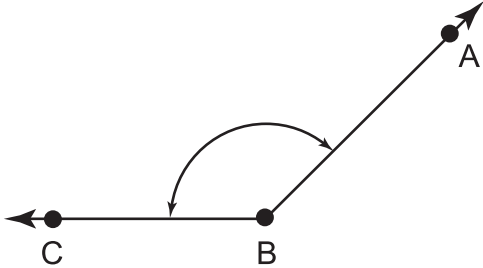


If Rita rolls the cube, what is the probability that it will land on a face showing triangles?

A. 1 out of 3
 B. 1 out of 6
 C. 3 out of 3
 * D. 3 out of 6

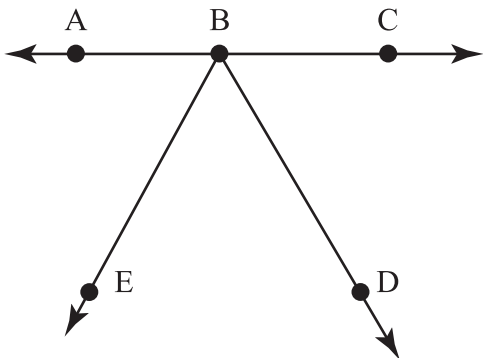
CALCULATOR PERMITTED—ITEMS 9–40

9. What is the **best** estimate of the measure of $\angle ABC$, in degrees?



- A. 45°
- B. 95°
- * C. 135°
- D. 170°

10. Angle ABD is congruent to $\angle CBE$. Which angle is congruent to $\angle ABE$?



- A. $\angle ABC$
- * B. $\angle CBD$
- C. $\angle DBA$
- D. $\angle EBC$

11. There are 8 boys and 7 girls in Mrs. Camden's music class. To pick a student to play the new keyboard, she plans to put everyone's name in a bag. What is the probability that a girl's name will be randomly picked?

- A. 1 out of 7
- B. 1 out of 15
- C. 7 out of 8
- * D. 7 out of 15

12. Which numbers below are divisible by both 2 and 5?

20	25	75	80	88
----	----	----	----	----

- * A. 20 and 80
- B. 20 and 88
- C. 25 and 80
- D. 25 and 88

13. What is the next number in the pattern?

3	9	27	?
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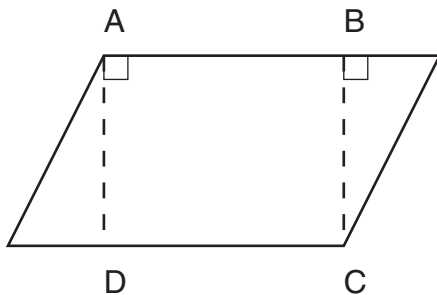
- A. 30
- B. 36
- C. 61
- * D. 81

14. Don kept track of how many pages he read in a book.

Day	Number of Pages
1	40
2	80
3	120
4	?

If his reading pattern continues, how many pages will Don have read by the end of the fourth day?

- * A. 160 pages
 - B. 200 pages
 - C. 240 pages
 - D. 260 pages
15. Sally will use the parallelogram below to make a new polygon. If she cuts along the dotted lines as shown below, what will be the new polygon ABCD?



- A. triangle
- B. hexagon
- * C. rectangle
- D. pentagon

16. Which of the following would be **best** measured in square feet?

- A. the height of a door
- B. the surface of Earth
- * C. the area of a living-room floor
- D. the area of a piece of notebook paper

17. Kendra and 4 friends are giving equal amounts of money to buy a \$2.40 bag of candy. How much should each person give?

- A. \$0.24
- * B. \$0.48
- C. \$0.60
- D. \$2.40

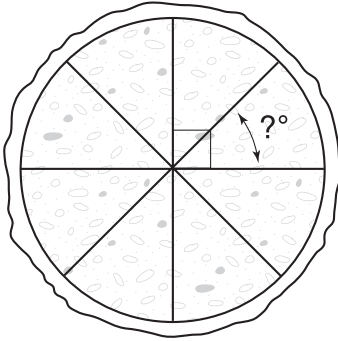
18. Eva created a table to show how many red gumdrops are in each of 5 bags.

Eva's Bags	
Bag	Number of Red Gumdrops
1	11
2	16
3	10
4	16
5	12

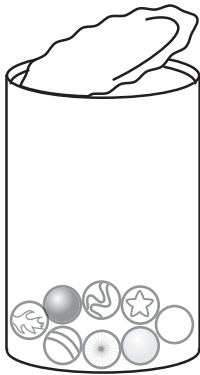
What is the mean number of red gumdrops in the bags?

- A. 10
- B. 12
- * C. 13
- D. 16

19. Jamal divided a pizza into 8 equal parts. What would be the measure, in degrees, of each pizza angle, as shown below?



- * A. 45°
 B. 90°
 C. 360°
 D. 720°
20. Nick knows he can fill the bottom of the small can shown below with about 8 marbles.



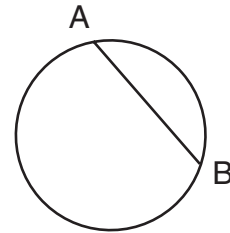
He was able to fill the entire can with about 6 layers of marbles. **Approximately** how many marbles filled the can?

- A. 40
 * B. 50
 C. 90
 D. 100

21. What is the rule for finding the output in the function table below?

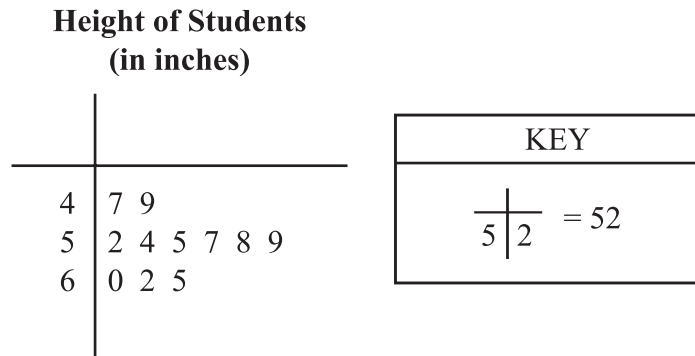
input n	output ?
28	4
56	8
70	10
350	50
490	70

- A. add 24
 B. subtract 24
 C. multiply by 7
 * D. divide by 7
22. What is the correct term that describes \overline{AB} on the circle below?



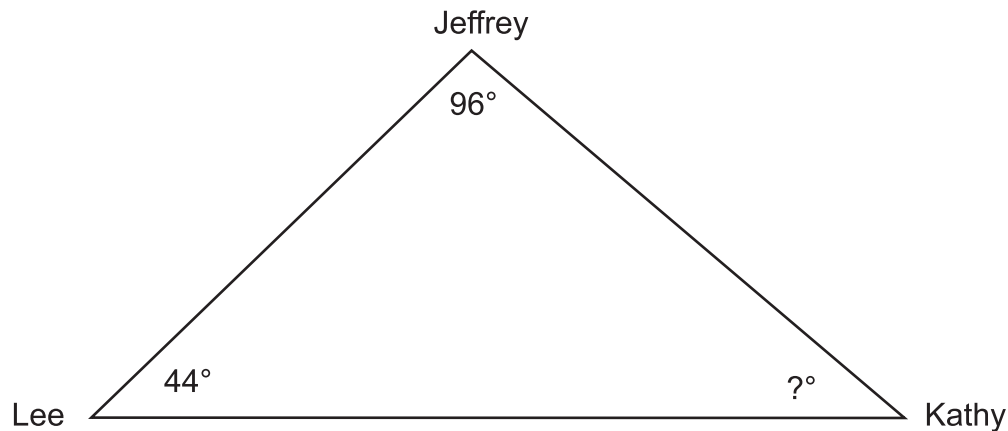
- * A. chord
 B. center
 C. radius
 D. diameter

23. According to the stem-and-leaf plot below, what is the range of heights for the students in Mr. Ray's fifth-grade class?



- A. 16 inches
 * B. 18 inches
 C. 22 inches
 D. 65 inches
-
24. What is the value of n in the equation below?
- $$n - 16 = 76$$
- A. $n = 60$
 B. $n = 76$
 C. $n = 82$
 * D. $n = 92$
25. Ernie spent $\frac{2}{3}$ of his free time playing video games. If Ernie had 45 minutes of free time, how many minutes did he spend playing video games?
- A. 15 minutes
 B. 22 minutes
 * C. 30 minutes
 D. 45 minutes
26. Maurice bought a box of 24 cookies to share equally with his 7 friends. How many cookies should Maurice and his friends each receive?
- * A. 3
 B. 4
 C. 7
 D. 8
27. The players on the school basketball team may wear blue, white, or red shirts and blue, white, or red shorts. How many **different** combinations of shirts and shorts do the players have?
- A. 3
 B. 6
 C. 8
 * D. 9

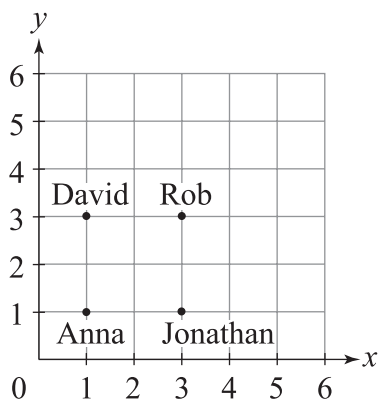
28. Jeffrey, Kathy, and Lee are throwing baseballs. The diagram below shows their positions.



What is the measurement, in degrees, of the angle formed by Kathy's position in relationship to Jeffrey's and Lee's positions?

- A. 20°
- * B. 40°
- C. 140°
- D. 220°

29. Who is standing at point (3, 1)?



- A. Rob
- B. Anna
- C. David
- * D. Jonathan

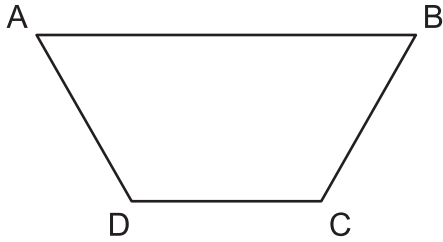
30. The middle school is holding elections for fifth-grade class president and vice president.

Candidates	
President	Vice President
Margie	Tasha
Greg	Michelle
Shaquille	Gordon

How many president-vice president combinations can be created from the list of candidates in the table above?

- A. 3
- B. 6
- C. 8
- * D. 9

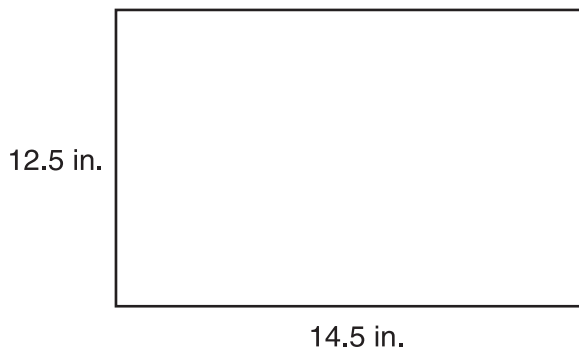
31. Estimate the measure, in degrees, of $\angle BCD$.



- A. 60°
- B. 90°
- * C. 120°
- D. 180°

32. Carrie's favorite game has a game board like the one below. She would like to know the area of the board, so that she can make a new board for this game.

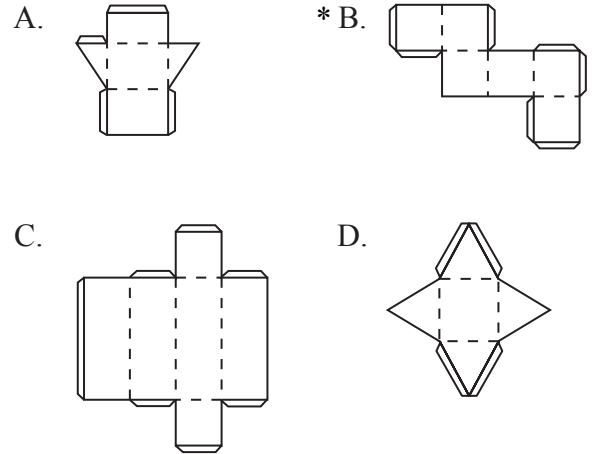
Game Board



What is the area of Carrie's game board, to the nearest whole number?

- A. 27 square inches
- B. 54 square inches
- * C. 181 square inches
- D. 270 square inches

33. Which of the following nets forms a cube when folded along the dotted lines?



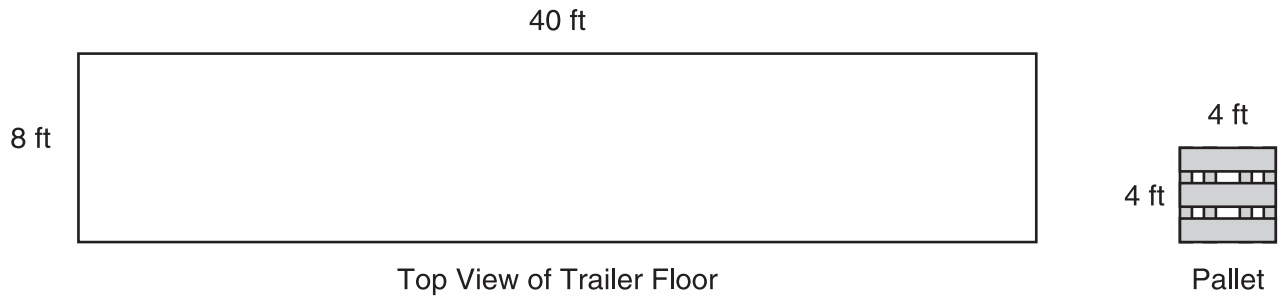
34. Which expression represents the rule for finding the output in the function table below?

input n	output ?
9	14
8	13
7	12
6	11
5	10

- * A. $n + 5$
- B. $n - 1$
- C. $n \times 5$
- D. $n \div 1$

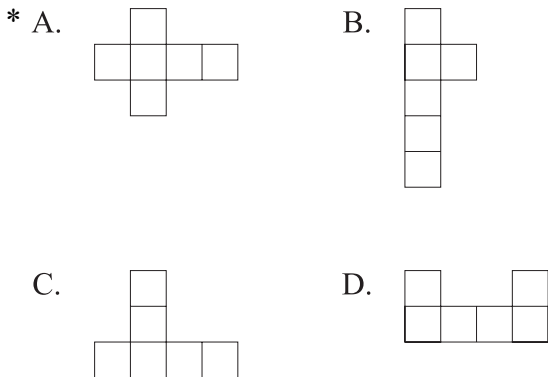
PART II Released Mathematics Items—2007 Benchmark Grade 5

35. Patrick's uncle fills trailers with pallets in a warehouse. The floor of each trailer is 8 feet wide and 40 feet long, and each pallet is 4 feet by 4 feet.



How many pallets will fit on the floor of the trailer?

- A. 10
- * B. 20
- C. 160
- D. 320
36. Which of the following nets (or patterns) can be folded to make a cube?



37. What value of n makes the sentence true?

$$(6 + 3) + 5 = 6 + (3 + n)$$

- A. 0
- B. 3
- * C. 5
- D. 6

38. Raheem used the table below to record the high temperatures in his town.

High Temperature in Raheem's Town	
Day	Temperature (°F)
Sunday	80
Monday	86
Tuesday	90
Wednesday	81
Thursday	80
Friday	85
Saturday	89

What was the median high temperature for the week?

- A. 80°F
- B. 84°F
- * C. 85°F
- D. 89°F

39. The babysitter earned \$15.00 on Monday, \$12.00 on Tuesday, and then spent \$7.00 on Wednesday. Which equation below shows how much money the babysitter has left on Thursday? Let m = the amount of money left.

* A. $(15 + 12) - 7 = m$
B. $(15 \div 12) - 7 = m$
C. $(15 - 12) - 7 = m$
D. $(15 \times 12) - 7 = m$

40. Will generally makes 1 shot out of 4 attempts during basketball practice. How many baskets is he expected to make if he attempts 36 shots?

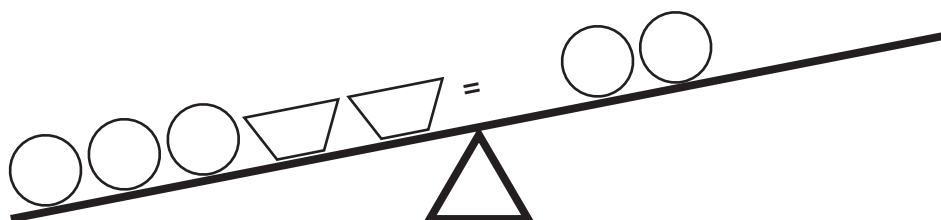
A. 4
* B. 9
C. 18
D. 36

MATHEMATICS OPEN-RESPONSE ITEM A

- A.** The value of each trapezoid on the balance scale below is 2.



1. If the 2 trapezoids and 1 circle on the left side of the balance scale equal 8, what is the value of 1 circle? Show all your work and/or explain your answer.
2. In the figure below, 2 more circles were added to the left side of the balance scale, causing the scale to become unbalanced.



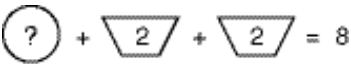
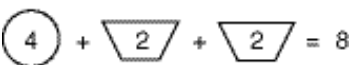
How many trapezoids should be added on the right side to balance the scale? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM A

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown. Ex: Incorrect value used for trapezoid, but student work shows the left side adds to 8 in Part 1 (Trapezoid = 3, Circle = 2, and $3 + 3 + 2 = 8$).
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

Solution and Scoring

Part	Points
1	<p>2 points possible</p> <p>1 point: Correct answer: 4. AND</p> <p>1 point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> Finds value of circle by setting left side equal to right side of scale. Ex: $x + 2 + 2 = 2x$, $x = 4$ Finds value of circle using left side of scale. Ex: $C + 2 + 2 = 8$, $C + 4 = 8$, $C = 4$ Ex: $2 + 2 + 4 = 8$ (guess & check) Ex: <div style="text-align: center;">   </div> Finds value of circle using right side of scale. Ex: “If the left side = 8, that means 2 circles on the right = 8. Half of 8 is 4, so 1 circle equals 4.” Ex: $4 + 4 = 8$ Ex: $8 \div 2 = 4$ <p>OR</p> <p>½ point: Incomplete or vague procedure shown or explained, but understanding is shown. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> $4 + 2 + 2$ (not set = to 8), or “The left side = 8, so 2 trapezoids = 4, $8/2 = 4$” (jumps from left to right side—does not connect $8/2 = 4$ to right side), or “2 trapezoids are 4 so a circle is 4” (no calculation or explanation for $c = 4$).

Part	Points
2	<p>2 points possible</p> <p>1 point: Correct answer: 4, or correct answer based on incorrect value of one circle in Part 1.</p> <p>AND</p> <p>1 point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • <u>Finds the total value of the left side to find # needed.</u> Note: Values for like symbols may be combined. Ex: “L: $4 + 4 + 4 + 2 + 2 = 16$. R: $4 + 4 = 8$, $16 - 8 = 8$. $8 \div 2 =$ # trapezoids needed.” • <u>Uses the value of the 2 circles added to find # needed.</u> Ex: “2 circles have a value of 8 and were added to the left side, so we need to add 8 to the right side. $4 \times 2 = 8$, so we need 4 trapezoids.” • <u>Uses the comparative value of the circle and trapezoid.</u> Ex: “Since a circle (4) weighs twice as much as a trapezoid (2) and 2 circles are added to the left side, you would double that and add 4 to the right side.” <p>OR</p> <p>$\frac{1}{2}$ point: Incomplete or vague procedure shown or explained, but some correct procedure is shown. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • “Left side = 16, right side = 8, so you need $8/2=4$” (no work for 16), or • “2 circles = 8, 4 trapezoids = 8, $8 + 8 = 16$” (no work for left side), or • “Left = 16, Right is 8. $16 - 8 = 8$ is needed. So it’s $8/4 = 2$ circles.”

MATHEMATICS OPEN-RESPONSE ITEM B

B. Lisa has a bag filled with cherry and apple lollipops.

1. There are 4 cherry lollipops out of the 12 lollipops in Lisa's bag. What is the probability of pulling a cherry lollipop out of the bag, without looking, on the first try? Show all your work and/or explain your answer.
2. Lisa put 8 more lollipops in her bag. The probability of pulling out a cherry lollipop now is 1 out of 2. How many cherry lollipops are in Lisa's bag of lollipops now? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM B

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

PART II Released Mathematics Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points
1	<p>2 points possible</p> <p>2 points: Correct probability (4/12, 1/3, 4 out of 12, 1 out of 3, or 33 1/3 %) with correct and complete procedure shown and/or explained. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • “It’s 1 out of 3 because there are 4 cherry lollipops and all together there are 12” (includes correct probability, # of cherry, and total #), or • “4/12 since 4 are cherry out of 12” (includes correct probability, # of cherry, and total #), or • “4 out of 12” (with drawing showing 4 cherry lollipops out of 12 total lollipops). <p>OR</p> <p>1 point: Response shows understanding of probability, but response is incomplete or contains an error. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • Correct probability with incomplete or missing work and/or explanation. Ex: “Probability is 4 out of 12 since there are only 4 cherry” (no mention of total #). Ex: “1/3 because there are 12 total” (no mention of # of cherry). Ex: “33 1/3 %” (correct probability with missing explanation). Or • Probability is incorrect due to a copy or calculation error, but procedure is correct and complete. Ex: “It’s 4/13 because there are 4 cherry lollipops out of a total of 13.” Ex: “Chances are 4 out of 12 which reduces to 1/4 because 4 out of 12 total lollipops are cherry.” <p>Note: Do not give credit if no understanding of probability is shown and/or response only repeats given information. Ex: “Its chances are 4 since there are 4 cherry out of 12 total.”</p>
2	<p>2 points possible</p> <p>1 point: Correct answer: 10, or correct answer based on incorrect work in Part 1. AND</p> <p>1 point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • $12 + 8 = 20$ total $\frac{1}{2} = \frac{n}{20}$, so $n = 10$, or • “Now there are 8 plus 12 or 20 in the bag. 1 out of 2 means half of them are cherry. Half of 20 is 10, so 10 are cherry,” or • Diagram shows 20 total lollipops and $\frac{1}{2}$ of them are identified as cherry or grouped together. <p>Note: Do not give procedure credit for incomplete work or explanation. Ex: “1/2 of 20 is 10” (no work or explanation to find 20). Ex: “8 + 12 = 20, so it’s 10” (no work or explanation for $\frac{1}{2}$ of 20).</p>

MATHEMATICS OPEN-RESPONSE ITEM C

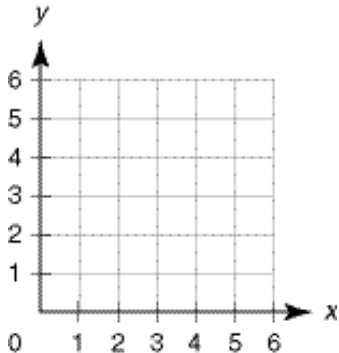
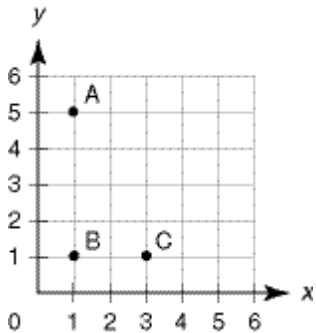
- C. A teacher gave students a sheet of graph paper and asked them to draw a mystery geometric figure.
1. On the grid provided in your answer document, draw and label the x -axis and the y -axis. Label each axis with the numbers 1 through 6.
 2. The teacher asked the students to plot three points. Plot and label each of the following ordered pairs.
 - Point A (1, 5)
 - Point B (1, 1)
 - Point C (3, 1)
 3. Next, the teacher asked the students to use line segments to connect each point to discover the mystery geometric figure. Draw these line segments in your answer document.
 4. What type of geometric figure is formed by connecting the points?

BE SURE TO LABEL YOUR RESPONSES 1, 2, 3, AND 4.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM C

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown. Ex: 2 points are correctly plotted without labels in Part 2. Ex: The x and y axes are reversed and the points are plotted accordingly in Part 2.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

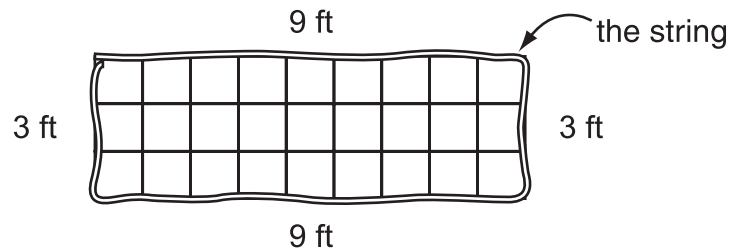
Solution and Scoring

Part	Points
1	<p>1 point possible</p> <p>1 point: Correct and complete coordinate system that contains all of the following:</p> <ul style="list-style-type: none"> • intervals are consistent • 1–6 identified on each axis • x and y axes are appropriately labeled <p>Note: Arrows on the x and y axes are not required. A label of “0” for the origin is not required.</p> <p>Ex:</p>  <p>Note: Do not give credit if the graph is incomplete or contains error(s).</p>
2	<p>2 points possible</p> <p>2 points: Three points are correctly plotted and labeled. Labels may use letters A, B, and C or ordered pairs: (1, 5), (1, 1), (3, 1). Ex:</p>  <p>OR</p> <p>1 point: Give credit for the following:</p> <ul style="list-style-type: none"> • A, B, and C are correctly plotted, but labels are missing, or • Two out of three points are correctly plotted and labeled.

Part	Points
3–4	<p>1 point possible</p> <p>Note: Students do not have to connect the 3 vertices of the triangle.</p> <p>1 point: Give credit for the following answers if 3 segments are drawn connecting the 3 points or if the points are not connected:</p> <ul style="list-style-type: none"> • “Triangle,” “Right triangle,” or “Scalene triangle.” <p style="padding-left: 40px;">Note: Answer of “triangle” may be based on incorrectly plotted non-collinear points.</p> <p style="padding-left: 40px;">Note: Do not give credit if the answer is incorrect. Ex: “Isosceles triangle.”</p> <p style="text-align: center;">Or</p> <p>Give credit for the following answers if segments AB and BC are drawn:</p> <ul style="list-style-type: none"> • “Right angle,” or “Angle.” <p style="text-align: center;">Or</p> <p>Give credit for the following answers if segments AB and AC or AC and BC are drawn:</p> <ul style="list-style-type: none"> • “Acute angle,” or “Angle.”

MATHEMATICS OPEN-RESPONSE ITEM D

- D. Mark is using 24 feet of string to plan a garden in his backyard. First, he made a plan with dimensions of 9 feet by 3 feet.



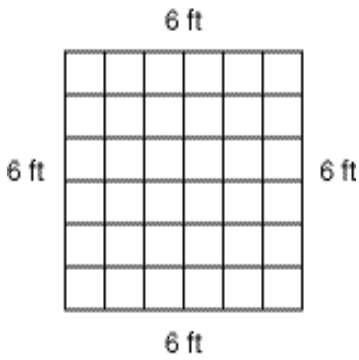
1. His mom says she wants the garden to be a perfect square. What should the dimensions of the garden plan be changed to in order to make a perfect square, using his 24 feet of string? Show all your work and/or explain your answer.
2. Which has the **greatest** area—the 9 feet by 3 feet garden or the perfect square garden? Show all your work and/or explain your answer.

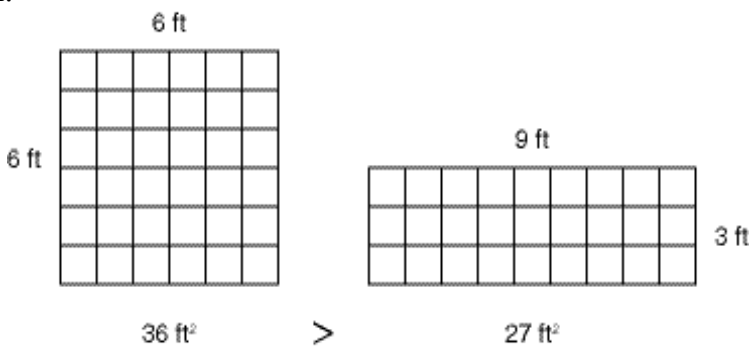
BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM D

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The response contains correct labels on dimensions in Part 1 (feet x feet). If drawing(s) are included, they must be accurately drawn.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

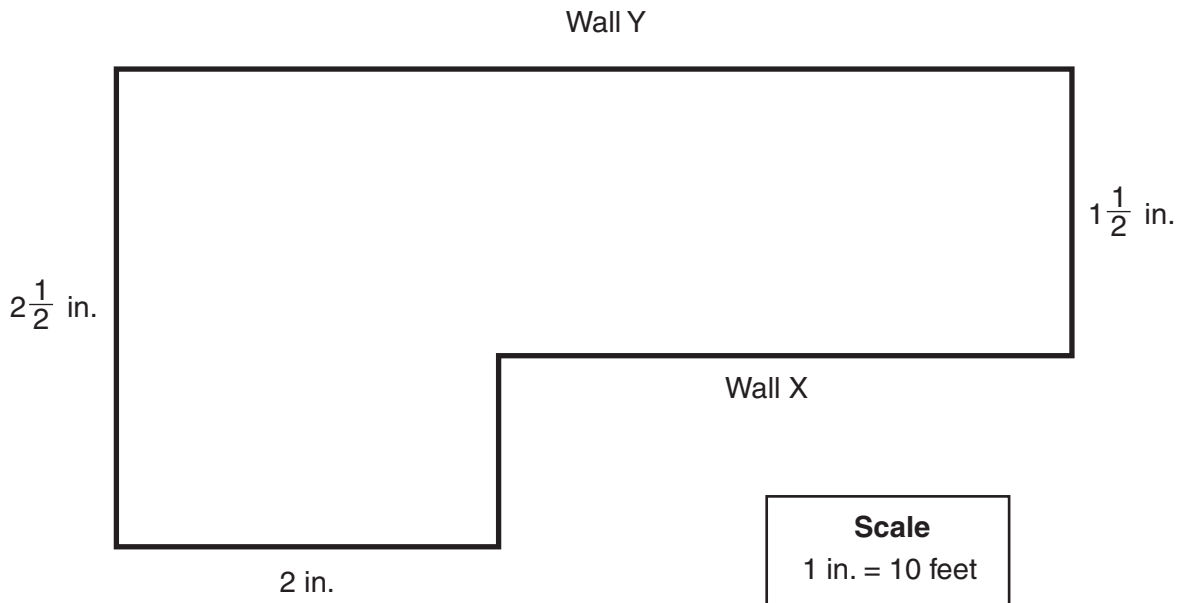
Solution and Scoring

Part	Points
1	<p>2 points possible</p> <p>1 point: Correct answer: 6 by 6, or diagram labeled with “6” as the length and “6” the as the width. (Label of “feet × feet” is required for a score of 4.)</p> <p>AND</p> <p>1 point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • $24 \div 4 = 6$, or • $6 + 6 + 6 + 6 = 24$, or • Diagram of a square labeled with “6” on all 4 sides showing the perimeter. <p>Ex:</p> <div style="text-align: center;">  </div> <p>Note: Credit can be given for the answer and procedure for the diagram of a 6 x 6 square with “6” labeled on all 4 sides.</p> <p>Note: Do not give credit for incomplete procedure. Ex: “It would use all the string,” or “It would go all around.”</p>

Part	Points
2	<p>2 points possible</p> <p>2 points: Correct answer: “The 6 x 6 (or square) is larger” with correct and complete work shown and/or explained, or correct answer based on incorrect dimensions given in Part 1. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • $6 \times 6 = 36$ & $9 \times 3 = 27$, or • “For a given perimeter, area is always maximized in a square,” or • Diagram of a labeled 6×6 square, divided into 36 sections, with area identified as “36,” and diagram of a labeled 3×9 rectangle, divided into 27 sections, with area identified as “27.” Identifies which has the larger area. <p>Ex:</p> <div style="text-align: center;">  </div> <p>OR</p> <p>1 point: Work is incomplete or contains a calculation or copy error, but an understanding of area is shown and correct procedures are used. Give credit for the following:</p> <ul style="list-style-type: none"> • “A square garden has an area of 36 square feet, while a 9 by 3 garden has an area of 27 square feet, therefore the 6×6 garden has a greater area.” (No work to find areas), or • Two areas are listed (may be based on Part 1)—work is incomplete or missing. Choice of the greater area may be missing but may not be incorrect, or • One incorrect area due to one calculation and/or copy error. Correct procedures are used with work shown or explained. Choice of the greater area may be missing but not incorrect (i.e. $6 \times 6 = 36$, $3 \times 9 = 28$), or • “When the perimeter is the same, it’s the square”(vague explanation). <p>Note: Do not give credit for “the square is larger” without any support. Note: Do not give credit if incorrect procedure is included. Ex: $6 \times 4 = 24$ (finds perimeter instead of area of square).</p>

MATHEMATICS OPEN-RESPONSE ITEM E

E. Karla drew a floor plan of her classroom.



1. Using your ruler to measure, what is the length of Wall Y in the floor plan?
2. Use the scale to find the actual length of Wall Y. Show all your work and/or explain your answer.
3. Using the scale, what is the actual length of Wall X? Show all your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

RUBRIC FOR MATHEMATICS OPEN-RESPONSE ITEM E

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The correct label of “inches” is included in Part 1. The correct label of “feet” is included in Parts 2 and 3.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Mathematics Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points
1	<p>1 point possible</p> <p>1 point: Correct answer: 5 (inches). Note: Label may be missing, but do not give credit if an incorrect label is used (Ex: feet, yards, centimeters).</p>
2	<p>1 point possible</p> <p>$\frac{1}{2}$ point: Correct answer: 50 (ft.), or correct answer based on incorrect answer in Part 1. Note: Label may be missing, but do not give credit if an incorrect label is used (Ex: inches, yards, meters).</p> <p>AND</p> <p>$\frac{1}{2}$ point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error, or may be based on an incorrect answer in Part 1. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • $5 \times 10 = \#$, or • “I multiplied the # of inches on the floor plan for Wall Y (5) by the # of feet (10) that each inch represents to get the answer...,” or • Correct and complete verbal description of proportion: “If 1 inch equals 10 feet, then 5 inches equals 50 feet.”
3	<p>2 points possible</p> <p>1 point: Correct answer: 30 (ft.), or correct answer based on incorrect answer in Part 1. Note: Label may be missing, but do not give credit if an incorrect label is used. (Ex: inches, yards, meters.)</p> <p>AND</p> <p>1 point: Correct and complete procedure shown and/or explained. Work may contain a calculation or copy error, or may be based on an incorrect answer in Part 1. Give credit for the following or equivalent:</p> <ul style="list-style-type: none"> • Uses measure of Wall Y found in Part 1 and subtracts 2 inches. (If this method is used and Part 1 is incorrect, work must be shown and/or explained.) <ul style="list-style-type: none"> ▪ “Subtract 2 inches from the measure of Wall Y (5 inches) to get the length of Wall X on the floor plan (3 inches). Then use the scale to find the actual length. So $3 \times 10 = 30$,” or ▪ $5 - 2 = 3$, $3 \times 10 = \text{Answer}$ <p style="text-align: center;">Or</p> • Measures Wall X: <ul style="list-style-type: none"> ▪ Wall X is 3 inches. $3 \times 10 = \#$, or ▪ $3 \times 10 = \text{Answer}$, or ▪ Correct and complete verbal description of proportion: “Since 1 inch is 10 feet, then I know that 3 inches is 30 feet.”

Mathematics Reference Sheet

Grade 5

Use the information below, as needed, to answer questions on the Mathematics test.

Square	Rectangle	Triangle
Area = $s \times s$ Perimeter = $4 \times s$	Area = $l \times w$ Perimeter = $(2 \times l) + (2 \times w)$	Perimeter = $a + b + c$

1 foot = 12 inches

1 yard = 3 feet

1 mile = 5,280 feet

1 cup = 8 ounces (oz)

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 kilogram = 1000 grams

1 meter = 100 centimeters

1 centimeter = 10 millimeters

1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 pound (lb) = 16 ounces (oz)

Read the following passage, then answer multiple-choice questions 1 through 8 and open-response question A.

My Mom Hates to Cook

by Ann Harth

My mom hates to cook. She'd rather tinker with her motorcycle or practice knot tying for rock climbing. She also spends a lot of time with me.

2 Every morning Mom takes me to school. I put on my purple helmet and climb into The Beast. (When I was born, Mom added a sidecar to her radiant red Harley Davidson.)

I don't mind it except that I can't finish my homework on the way to school like other kids can. Also, I usually arrive looking like I just stepped off a roller coaster. Wind and purple helmets don't help the hair much.

Mom's passion, after me and her Harley, is climbing. I would say "rock climbing," but we don't have any large rocks or mountains nearby. Mom has to improvise.

5 Occasionally I'll come home to find her scaling the side of the house. "Hi, honey!" she'll yell, waving madly. My mom's voice really carries, especially when I'm with a large group of kids.

I used to feel embarrassed that my mom was so different. She'd even try to blend in for my sake. She stopped singing Beatles songs and pretending to play the bass while she waited for me after school. She practiced her cartwheels in our backyard instead of on the football field. Those were little things, but I knew that she was trying.

Now I've come to appreciate Mom for who she is—and not just because she's a hero.

It all started with a cooking project. Every student in Mrs. Maitland's home-economics class was supposed to create an original dish, then present it at school the following Tuesday morning. I begged Mom to help me. She gave in, but not until I promised to help her wax The Beast.

9 We spent hours in the kitchen. We tried jelly-filled hot dogs and noodleless lasagna, baked ham with chocolate sauce, and hard-boiled eggs rolled in coconut. We eventually agreed on chocolate cake with bright-green peppermint frosting. I was satisfied. It beat hot dogs, anyway.

The big day came. Our parents were supposed to bring our culinary delights to the classroom at eleven o'clock. As Mom dropped me off that morning, I tied strings around her fingers and made her repeat, "I will not forget the cake. I will not forget the cake." I watched her muttering it as she chugged away.

After math, we all filed up to the third floor. I looked around for Mom. She wasn't there.

Sammy Pingle's father had brought some sort of chicken dish. Pamela Bean and her aunt had a pitcher of liquid with lemons floating in it. Janet Greely and her mom proudly stood near an enormous fruit salad topped with little marshmallows. *Where are you, Mom?* I wondered.

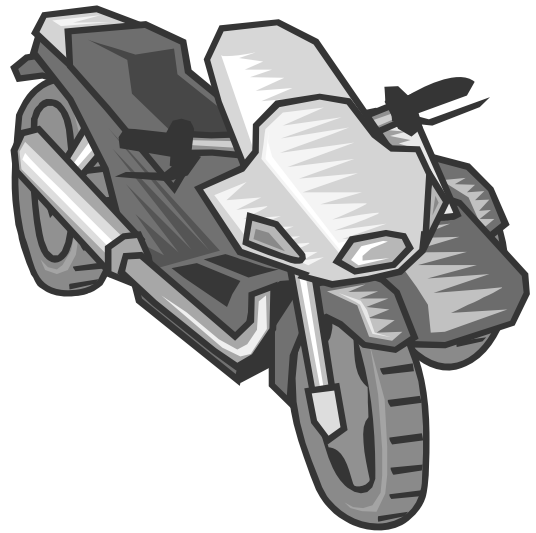
The minutes ticked by. More grown-ups appeared, brandishing more tasty dishes. Finally I heard the distant roar of The Beast. I raced to the window. I slumped. Mom was empty-handed!

I met her at the door.

"You forgot it, didn't you?"

Mom's eyes opened wide.

"I'm sor—" She couldn't finish her apology; a clanging alarm cut her off.



PART II Released Reading Items—2007 Benchmark Grade 5

Mrs. Maitland yelled, “Fire! This is not a drill! Everyone out of the building!”

We all headed for the stairs.

We found out later that Misty Branden’s older brother had been heating oil for popcorn. He’d started talking to Timothy Smythe’s older sister and had forgotten about the hot oil. When Misty came to put caramel on her popped corn, there were flames leaping from the pan.

Everyone piled into the parking lot. Smoke started to curl out of one of the third-floor windows. Mom held my hand tightly. I forgot about my cake.

As Mrs. Maitland was taking attendance, we heard a scream. We looked up and saw Shannon Patterson peering out the window of the room next to the fire.

“Help!” she cried out. “I’m trapped!”

Mom disappeared. She grabbed her climbing gear from The Beast and strode toward the building. She scaled the huge pine tree next to the school. At the top, she started to throw her weight back and forth. The tree swung toward the window, and she hopped onto the ledge and into the building.

Mom’s ropes flew as she created a harness. She secured one end, then lowered a shaky Shannon safely to the ground.

“Release the harness!” she yelled.

I found myself at the bottom of the rope, remembering all the knotting and unknotting lessons I’d had. As soon as Shannon was free, Mom pulled the rope up quickly. She rappelled down the side of the building while everyone cheered. As she reached the ground, I heard her softly humming “Yellow Submarine.” I couldn’t stop grinning.

Who cares if my mom hates to cook?

1. What is the **most** likely reason the narrator hears the Beatles song “Yellow Submarine” as Mom reaches the ground?

- * A. Mom likes to sing songs that the Beatles recorded.
- B. Mom’s Harley Davidson resembles a yellow submarine.
- C. Mom’s rock climbing club always sings it after a rescue.
- D. Mom thinks that Shannon Patterson’s favorite color is yellow.

2. What is the purpose of this passage?

- A. to share unusual cake recipes
- B. to increase the use of motorcycles
- * C. to demonstrate that everyone has special skills
- D. to warn students of the dangers of cooking with oil

3. One of the cooking experiments included noodleless lasagna (paragraph 9). Which description **most** likely describes its appearance?
- * A. sauce and meat, without noodles
 - B. layered sauce, meat, and noodles
 - C. sauce and meat on top of noodles
 - D. sauce, meat, and noodles chopped together
4. Who would benefit **most** from reading this passage?
- A. someone who wants to learn to climb rocks
 - * B. a friend embarrassed by a parent's behavior
 - C. teachers who need to know what to do in case of a fire
 - D. parents trying to persuade a child to use good manners
5. Which quality **best** describes the narrator's mother?
- * A. stands out
 - B. works hard
 - C. avoids danger
 - D. enjoys reading
6. What does radiant mean in paragraph 2?
- A. pale
 - * B. bright
 - C. dented
 - D. powerful
7. Which word is a synonym for scaling as it is used in paragraph 5?
- A. cleaning
 - * B. climbing
 - C. weighing
 - D. measuring
8. What is this passage mainly about?
- A. the many jobs moms have
 - B. how climbing can save lives
 - C. the dangers of cooking with oil
 - * D. appreciating parents just as they are

PART II Released Reading Items—2007 Benchmark Grade 5**READING OPEN-RESPONSE ITEM A**

- A. What did the narrator learn about being different? How will this understanding affect the narrator's relationship with her mother? Support your response with two details from the passage.

RUBRIC FOR READING OPEN-RESPONSE ITEM A

SCORE	DESCRIPTION
4	The response states what the narrator learned about being different, tells how the narrator's relationship with her mother will be affected, and provides two details from the passage for support.
3	The response states what the narrator learned about being different, tells how the narrator's relationship with her mother will be affected, and provides one detail from the passage for support. OR The response states what the narrator learned about being different and provides two details from the passage for support. OR The response tells how the narrator's relationship with her mother will be affected and provides two details from the passage for support.
2	The response states what the narrator learned about being different and tells how the narrator's relationship with her mother will be affected. OR The response states what the narrator learned about being different and provides one detail from the passage for support. OR The response tells how the narrator's relationship with her mother will be affected and provides one detail from the passage for support.
1	The response states what the narrator learned about being different. OR The response tells how the narrator's relationship with her mother will be affected. OR The response provides a detail that shows some understanding of the passage.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

PART II Released Reading Items—2007 Benchmark Grade 5

Read the following passage about the trampoline. Then answer multiple-choice questions 9 through 16 and open-response question B.

For a copy of the reading passage, “The Invention of the Trampoline” by Steven Caney, please refer to the hard copy version of the Released Item Booklet.

For a copy of the reading passage, “The Invention of the Trampoline” by Steven Caney, please refer to the hard copy version of the Released Item Booklet.

9. What personal characteristic would George Nissen **most** likely need to become a successful inventor?
- A. impatience
 - * B. curiosity
 - C. kindness
 - D. sincerity
10. Where would this passage **most** likely be found?
- A. in a newspaper article about the 1920s
 - B. in an encyclopedia entry about the circus
 - C. in a magazine article about early Eskimos
 - * D. in a book about twentieth-century inventions
11. Why was George Nissen interested in bouncing tables?
- A. He was a vaudeville comedian.
 - B. He was a circus performer.
 - C. He was an Eskimo.
 - * D. He was a gymnast.
12. What is the main idea of the passage?
- * A. A person can accomplish a lot with few resources if he or she keeps trying.
 - B. Neighbors often make negative judgments about the actions of others.
 - C. Money is not helpful for inventing new products.
 - D. Inventions should always have a practical value.
13. Which sentence uses transport with the same meaning it has in paragraph 6?
- A. My grandmother was in a transport of happiness when we surprised her with a visit.
 - * B. My father will transport my bicycle to my uncle's house in the country.
 - C. Those students need some kind of transport to school each morning.
 - D. The soldiers flew on an old transport to get to their new base.
14. What material was used to make the jumping surface of the first successful trampoline?
- A. ropes
 - B. leather
 - * C. canvas
 - D. inner tubes
15. Which would be the **best** resource to find additional information about George Nissen?
- A. a novel about young gymnasts
 - B. a book about life in the 1920s
 - C. a history of circus performers
 - * D. an encyclopedia of inventors
16. What does taut mean as it is used in paragraph 2?
- A. furry
 - B. dried
 - * C. tight
 - D. soft

PART II Released Reading Items—2007 Benchmark Grade 5

READING OPEN-RESPONSE ITEM B

- B.** What are two reactions people may have toward someone who is trying to create something new or unusual? Provide two examples from the passage to support your answer.

RUBRIC FOR READING OPEN-RESPONSE ITEM B

SCORE	DESCRIPTION
4	The response provides two reactions to inventors and gives two examples from the passage to support the response.
3	The response provides one reaction to inventors and gives two examples from the passage to support the response. OR The response provides two reactions to inventors and gives one example from the passage to support the response.
2	The response provides one reaction to inventors and one example from the passage to support the response. OR The response provides two reactions to inventors.
1	The response provides one reaction to inventors. OR The response gives examples from the passage that show some understanding of the passage.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Reading Items—2007 Benchmark Grade 5

Read the following passage about snowboards. Then answer multiple-choice questions 17 through 24 and open-response question C.

For a copy of the reading passage, “Snow Business” by Mark Anders, please refer to the hard copy version of the Released Item Booklet.

For a copy of the reading passage, “Snow Business” by Mark Anders, please refer to the hard copy version of the Released Item Booklet.

17. What is the purpose of the passage?
- * A. to inform readers of facts to know about buying a snowboard
 - B. to persuade readers to invest in snowboarding equipment
 - C. to explain a variety of ways to have fun in the snow
 - D. to compare snowboarding with skateboarding
18. Why might snowboarding boots hang over the edge of the board?
- A. The boots are too stiff.
 - B. The snowboard is too long.
 - * C. The snowboard is too narrow.
 - D. The boots are laced too tightly.
19. Which **best** describes the passage?
- * A. nonfiction
 - B. biography
 - C. realistic fiction
 - D. historical fiction
20. What is the purpose of the boxed text?
- A. to give credit to a source
 - B. to define unfamiliar words
 - C. to emphasize section headings
 - * D. to provide additional information
21. According to the passage, which is Ross Powers's **best** event?
- A. freeride
 - * B. halfpipe
 - C. ramps
 - D. rails
22. What does the author recommend for a snowboarder who is heavy for his or her size?
- A. a used board
 - B. a wider board
 - * C. a stiffer board
 - D. a longer board
23. What is the meaning of the prefix in the word supertight? (paragraph 8)
- A. great
 - * B. extra
 - C. loose
 - D. slight
24. What is the purpose of the bindings?
- A. to allow the rider to do tricks and jumps
 - B. to tighten the boots onto a rider's legs
 - C. to make the snowboard more flexible
 - * D. to fasten the snowboard to the boots

PART II Released Reading Items—2007 Benchmark Grade 5

READING OPEN-RESPONSE ITEM C

- C. What are two important things to remember when buying a snowboard? Provide two details from the passage to show why they are important.

RUBRIC FOR READING OPEN-RESPONSE ITEM C

SCORE	DESCRIPTION
4	The response states two important things to remember when buying a snowboard, and provides two details from the passage to show why they are important.
3	The response states two important things to remember when buying a snowboard, and provides one detail from the passage to show why they are important. OR The response states one important thing to remember and provides two details from the passage to show why it is important.
2	The response states one important thing to remember when buying a snowboard and provides one detail from the passage to show why it is important. OR The response states two important things to remember.
1	The response states one important thing to remember when buying a snowboard. OR The response provides a detail that shows some understanding of the passage.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

Acknowledgments

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PART II Released Writing Prompts—2007 Benchmark Grade 5

PROMPT #1

Your teacher has asked you to finish this story.

Yesterday, my friend and I decided to explore an old house. We slowly opened the door, and in the middle of the room we saw something that would change our lives forever.

Before you begin to write, think about what you saw when you opened that door. What did you see? What happened next?

Now finish the story and tell what happened when you opened that door. Give enough detail so that your teacher will understand.

PROMPT #2

Your teacher has asked you to write about this topic:

If you could choose any person to be your older sister or brother, who would it be?

Before you begin to write, think about choosing someone to be your older sister or brother. Who would you choose? Would it be someone famous or someone you know? **Why** would you choose this person?

Now write about the person you would choose to be your older sister or brother. Be sure to name the person and explain why you chose this person. Give enough detail so that your teacher will understand.

WRITER'S CHECKLIST

- | | |
|---|---|
| <ol style="list-style-type: none">1. Look at the ideas in your response.<ul style="list-style-type: none">— Have you focused on one main idea?— Have you used enough detail to explain yourself?— Have you put your thoughts in order?— Can others understand what you are saying?2. Think about what you want others to know and feel after reading your paper.<ul style="list-style-type: none">— Will others understand how you think or feel about an idea?— Will others feel angry, sad, happy, surprised, or some other way about your response? (Hint: Make your reader feel like you do about your paper's subject.) | <ul style="list-style-type: none">— Do you have sentences of different lengths? (Hint: Be sure you have a variety of sentence lengths.)— Are your sentences alike? (Hint: Use different kinds of sentences.) <ol style="list-style-type: none">3. Look at the words you have used.<ul style="list-style-type: none">— Have you described things, places, and people the way they are? (Hint: Use enough detail.)— Are you the same person all the way through your paper? (Hint: Check your verbs and pronouns.)— Have you used the right words in the right places?4. Look at your handwriting.<ul style="list-style-type: none">— Can others read your handwriting with no trouble? |
|---|---|

Domain Scoring Rubric

Content (C)

The Content domain includes the focusing, structuring, and elaborating that a writer does to construct an effective message for a reader. It is the creation of a product, the building of a composition intended to be read. The writer crafts his/her message for the reader by focusing on a central idea, providing elaboration of the central idea, and delivering the central idea and its elaboration in an organized text. Features are:

- Central idea
- Elaboration
- Unity
- Organization

Style (S)

The Style domain comprises those features that show the writer purposefully shaping and controlling language to affect readers. This domain focuses on the vividness, specificity, and rhythm of the piece and the writer's attitude and presence. Features are:

- Selected vocabulary
- Sentence variety
- Tone
- Voice
- Selected information

Sentence Formation (F)

The Sentence Formation domain reflects the writer's ability to form competent, appropriately mature sentences to express his/her thoughts. Features are:

- Completeness
- Absence of fused sentences
- Expansion through standard coordination and modifiers
- Embedding through standard subordination and modifiers
- Standard word order

Usage (U)

The Usage domain comprises the writer's use of word-level features that cause written language to be acceptable and effective for standard discourse. Features are:

- Standard inflections
- Agreement
- Word meaning
- Conventions

Mechanics (M)

The Mechanics domain includes the system of symbols and cueing devices a writer uses to help readers make meaning. Features are:

- Capitalization
- Punctuation
- Formatting
- Spelling

Scoring Scale

Each domain is scored independently using the following scale:

4 = The writer demonstrates **consistent**, though not necessarily perfect, control* of almost all of the domain's features.

3 = The writer demonstrates **reasonable**, but not consistent, control* of most of the domain's features, indicating some weakness in the domain.

2 = The writer demonstrates **inconsistent** control* of several of the domain's features, indicating significant weakness in the domain.

1 = The writer demonstrates **little or no** control* of most of the domain's features.

*Control: The ability to use a given feature of written language effectively at the appropriate grade level. A response receives a higher score to the extent that it demonstrates control of the features in each domain.

The application of the scale, using actual student writing, is done with the assistance of a committee of Arkansas teachers, language arts supervisors, and representatives of the Arkansas Department of Education.

Non-scoreable and Blank Papers

Compositions are scored, unless they are off-topic, illegible, incoherent, refusals to respond, written in a language other than English, or too brief to assess. A score of "NA" indicates that the student's writing entry was non-scoreable and that entry will receive a score of "0."

1. ¹Making a peanut butter and jelly sandwich is actually quite easy to do.
²Then you gently spread the peanut butter evenly on one slice of bread and the jelly on the other slice of bread, being careful not to tear it.
³Finally, put the two slices of bread together and enjoy a tasty treat!
⁴You first get either chunky or smooth peanut butter, your favorite kind of jelly, two slices of fresh bread, and a knife.

Which is the correct order of sentences?

- A. 1, 3, 2, 4
 B. 1, 3, 4, 2
 * C. 1, 4, 2, 3
 D. 1, 4, 3, 2
2. Whenever I want
 To go to town,
 I wear my smile
 Instead of my frown.
- I discover that
 Each one I meet
 Smiles right back.
 I think I'm _____.

Which word would **best** fit in the blank in the last line of the poem?

- A. cool
 * B. neat
 C. wild
 D. great

3. **slender body, large wings, bright colors, hairy antennae**

In which type of writing would you **most** likely find the examples above?

- * A. descriptive
 B. expository
 C. persuasive
 D. narrative

Use the graphic organizer below to answer question 4.

How can the tree frog climb?

1. sticky toes and fingers
 2. long fingers and toes
 3. not much webbing between fingers

As you can see, nature has equipped the tree frog with features that help it climb.

4. What is the function of the last box of this graphic organizer?
- A. central idea
 B. topic sentence
 C. supporting detail
 * D. concluding sentence

5. **Dad and I went fishing. _____, Mom set up the tent.**

Which transition word **best** fills in the blank?

- A. Because
- * B. Meanwhile
- C. Otherwise
- D. Furthermore

6. ¹Imagine a day filled with roller coaster rides and mouth-watering food. ²That's how Jonah celebrated his tenth birthday. ³One hazy, hot, summer day, Jonah went with three of his friends to the amusement park to celebrate. ⁴The boys rode every roller coaster. ⁵The boys rode every water ride, not only because they were fun, but also because they helped them cool off. ⁶They ate hot dogs. ⁷They ate cotton candy and nachos with cheese. ⁸They drank cherry slushes and soft drinks. ⁹All the boys, especially Jonah, had a blast! ¹⁰It was definitely the best birthday he had ever had.

Sentence 1 is which type of sentence?

- * A. imperative
- B. declarative
- C. exclamatory
- D. interrogative

7. Which of the following can be joined by a conjunction to form a compound sentence?

- A. If the weather is nice. We will continue our walk.
- B. Even though it was Saturday. Victor woke up early.
- * C. Monica opened the peanut butter. Lee tasted the bread.
- D. After I finished eating. I watched my favorite television show.

8. **At the amusement park, I ate pizza and then I went swimming and finally I rode every ride they had.**

Choose the sentence that **best** corrects sentence formation errors in the example above.

- A. I ate pizza and swam I rode all the rides at the amusement park.
- B. I ate pizza at the amusement park, and I went swimming and I rode all the rides.
- * C. At the amusement park, I rode all the rides after I ate pizza and went swimming.
- D. At the amusement park, I ate pizza, and went swimming and I rode all the rides they had.

1. What term describes the path that each planet travels around the Sun?
 - * A. orbit
 - B. comet
 - C. eclipse
 - D. rotation

2. A pet-store owner has a theory that when breeding fish, the number of rocks and plants in the tank increases the survival rate of baby fish. Which experiment **best** describes how the store owner would determine how many baby fish survive?
 - A. one tank with no rocks and plants
 - B. one tank with many rocks and plants
 - * C. two tanks, one with many rocks and plants, and the second with no rocks and plants
 - D. two tanks, one with many rocks and no plants, and the second with no rocks and many plants

3. An educated guess that can be tested by an experiment is called
 - A. a conclusion.
 - * B. a hypothesis.
 - C. an inference.
 - D. a procedure.

4. Which **best** describes a mineral?
 - * A. Minerals are nonliving.
 - B. Most minerals are gases.
 - C. Most minerals are man-made.
 - D. Minerals do not have a chemical makeup.

5. Which question **cannot** be answered through scientific inquiry?
 - A. Why are habitats disappearing?
 - B. How are living things classified?
 - * C. How is the beauty of Earth determined?
 - D. Why are bone cells and muscle cells different?

6. Which of Earth's layers has the following characteristics?
 - Its regions are both made of iron and nickel.
 - The outer region is molten, while the inner region is solid.
 - It is the hottest of Earth's layers.
 - * A. core
 - B. crust
 - C. mantle
 - D. lithosphere

7. Which has definite volume, but no definite shape?
- A. gas
 - * B. liquid
 - C. solid
 - D. steam
8. Why does the Sun appear brighter than the surrounding stars?
- A. It is much larger in size.
 - * B. It is much closer in distance.
 - C. The angle of radiation is greater.
 - D. The physical properties are different.
9. Which two particles can be found in the nucleus of an atom?
- A. neutrons and electrons
 - B. electrons and protons
 - * C. protons and neutrons
 - D. electrons and quarks
10. What is the term for water that falls from the sky?
- A. condensation
 - * B. precipitation
 - C. evaporation
 - D. radiation
11. Jan put a pan of water on the stove. Which change of matter describes what will happen to the water on the stove when it is heated?
- A. solid to gas
 - B. gas to liquid
 - * C. liquid to gas
 - D. liquid to solid
12. What step of the scientific method is shown in the paragraph below?
- Our science team compared a mealworm and a beetle to find their similarities and differences. We found that they both have heads, antennae, segmented bodies, and legs. The beetle has a hard shell, wings, and more legs. The mealworm's body is soft and squishy.
- * A. conclusion
 - B. hypothesis
 - C. materials
 - D. problem
13. Tim found a large rock wedged on the bank of a rushing river. Twenty years later, he went back and found the same rock. What might be one difference he notices about the rock?
- A. It is larger than it was.
 - B. It is composed of different things.
 - C. It is the exact size it was 20 years ago.
 - * D. It is worn down where the water touches it.

14. When viewed under a microscope, which object would be identified as a one-celled organism?

- * A. bacterium
- B. muscle
- C. nerve
- D. skin

15. Which is an example of a chemical change?

- A. cutting a watermelon into thirteen pieces
- B. plucking the petals one by one from a flower
- * C. plants using water and carbon dioxide to make sugar and oxygen
- D. holding an ice cream cone while it melts and runs down your hand

16. Which of the following was formed because of erosion?

- A. volcano
- B. tsunami
- * C. valley
- D. fault

17. Which animal is an invertebrate?

- A. dog
- B. fish
- C. kangaroo
- * D. grasshopper

18. Which activity produces a chemical change?

- * A. burning paper
- B. melting butter
- C. dissolving salt in water
- D. forming sugar into a cube

19. Which two features make it possible for life to exist on Earth?

- A. aluminum and iron
- B. craters and highlands
- C. petroleum and magnetism
- * D. atmosphere and liquid water

20. Which word **best** describes a lizard?

- * A. vertebrate
- B. arthropod
- C. amphibian
- D. invertebrate

21. Which item, when placed near a compass, will cause the needle to change direction?

- A. desk
- B. pencil
- * C. magnet
- D. notebook

PART II Released Science Items—2007 Benchmark Grade 5

22. The chart below shows the length of daylight in the Northern Hemisphere.

Length of Daylight in the Northern Hemisphere

Degrees Latitude	Summer Solstice	Winter Solstice	Equinoxes
0°	12 hr 00 min	12 hr 00 min	12 hr
30°	13 hr 56 min	10 hr 04 min	12 hr
60°	18 hr 27 min	5 hr 33 min	12 hr
90°	24 hr 00 min	0 hr 00 min	12 hr

If you are at 30 degrees latitude, how long is the summer solstice?

- A. 10 hr 04 min
- * B. 13 hr 56 min
- C. 18 hr 27 min
- D. 24 hr 00 min

23. Which represents the **correct** order of visible light?

- A. blue, yellow, red, violet, green, orange, indigo
- B. red, green, violet, yellow, orange, blue, indigo
- C. green, blue, indigo, violet, red, orange, yellow
- * D. red, orange, yellow, green, blue, indigo, violet

24. What is the largest planet in our solar system?

- A. Mars
- B. Earth
- * C. Jupiter
- D. Saturn

25. What is the **correct** sequence of events in the water cycle?

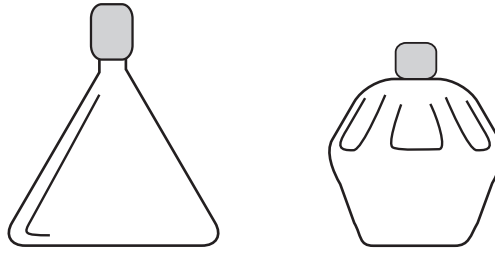
- * A. evaporation, condensation, precipitation
- B. condensation, evaporation, precipitation
- C. precipitation, condensation, evaporation
- D. evaporation, precipitation, condensation

26. Which animal is an invertebrate?

- A. frog
- * B. snail
- C. snake
- D. dolphin

PART II Released Science Items—2007 Benchmark Grade 5

27. A new substance is found. The substance is extremely lightweight. Most remarkably, it will expand and fill each of the containers below. Which type of matter is this new substance?



- * A. gas
 - B. solid
 - C. liquid
 - D. colloid
-
28. Plants and animals go through a series of distinct stages as they mature. What term is used to name this process?
- A. food web
 - * B. life cycle
 - C. ecosystem
 - D. community
29. Which action occurs in the conclusion stage of the scientific method?
- A. identifying the variables
 - B. formulating a hypothesis
 - C. carrying out the experiment
 - * D. writing a description based on the evidence
30. Which of the following in the human body acts as a filter for the bloodstream, cleaning out all the harmful chemicals while leaving all the good nutrients?
- A. brain
 - B. heart
 - C. lungs
 - * D. kidneys
31. Which statement **best** describes Earth?
- A. Earth is never changing.
 - * B. Earth is always changing.
 - C. Earth will be the same in 10,000 years.
 - D. Earth is approximately 60,000 years old.

PART II Released Science Items—2007 Benchmark Grade 5

32. The information below shows an index page from a science book.

I Igneous rocks, 156–157 Infrared radiation, 96 rays, 97 Invertebrates, 12–14 arthropods, 16 corals, 27 mollusks, 22 worms, 18	J Jackrabbit, 49 Joints, 100–103, 106 Jungle, 175 K Kidneys, 110 Kilowatts, 90 Kingdoms, 5–7	L Life cycles, see Cycles, life Life processes, 3–4 Lungs, 108 M Magma, 160 Mammals, 40, 49
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On what page would information about mollusks be found?

- A. page 14
- * B. page 22
- C. page 49
- D. page 96

33. What is part of the first step of a scientific experiment?

- A. a hypothesis
- B. a conclusion
- C. a list of materials
- * D. an investigative question

34. If the temperature is 32 degrees Fahrenheit, what will it be in Celsius?

- * A. 0°C
- B. 16°C
- C. 32°C
- D. 100°C

35. Which experiment will **best** determine how friction affects the speed of a rolling object?

- A. Roll three objects of various sizes across the floor.
- B. Roll three objects of equal size from various heights across a floor.
- * C. Roll three objects of equal size across three different types of surfaces.
- D. Roll three objects of equal size from equal heights of varying angles across the floor.

36. What is the word for the bending of light rays as they pass through one substance into another?

- A. polarization
- B. deposition
- C. reflection
- * D. refraction

37. Runoff from agricultural lands, golf courses, and lawns can carry fertilizer into streams, rivers, and lakes. What is the **most** likely effect of large amounts of fertilizer in these environments?

- A. The number of fish will increase.
- B. The fish will grow larger and stronger.
- * C. The fish will die from a lack of oxygen.
- D. The number of fish will remain the same.

38. You are given a mixture of sand and iron filings. How could these substances be separated, using physical means?

- A. by filtering them
- B. by separating them by color
- C. by dissolving them in water
- * D. by moving a magnet through them

39. What does the conclusion of an experiment tell you?

- A. how to do the experiment
- * B. the results of the experiment
- C. your grade on the experiment
- D. the materials needed for the experiment

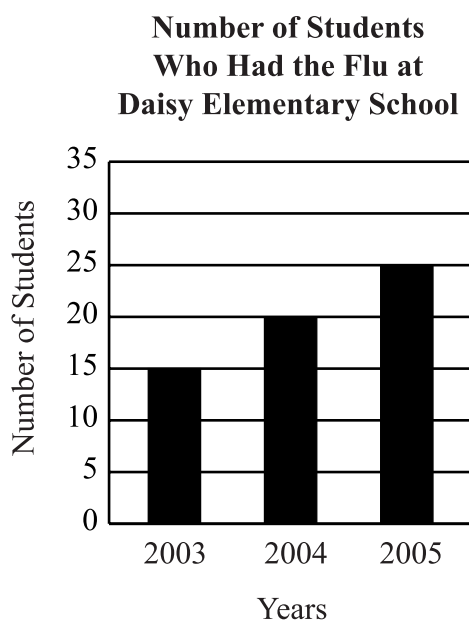
40. Your class is going to conduct experiments to determine what effect the slope of the land has on water erosion. Which of the four models listed below will have the **greatest** amount of erosion?

- A. Model A is flat.
- B. Model B has a 15% slope.
- C. Model C has a 25% slope.
- * D. Model D has a 35% slope.

PART II Released Science Items—2007 Benchmark Grade 5

SCIENCE OPEN-RESPONSE ITEM A

A. Look at the graph below.



1. How many students had the flu in 2004?
2. What happened year-to-year with the number of students who had the flu?
3. How many students do you predict will get the flu next year? Explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM A

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect statements.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Science Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points
1	1 point possible 1 point: Correct answer: 20.
2	1 point possible 1 point: Correct explanation (or equivalent). Ex: <ul style="list-style-type: none"> • “It increased.” • “It went higher.”
3	2 points possible 1 point: Correct answer: 30. AND 1 point: Correct explanation (or equivalent). Ex: <ul style="list-style-type: none"> • $25 + 5 = \#$ • “It went up by 5 every year.” <p>Note: If no attempt at an explanation is given in Part 3, do not bring down the information from Part 2.</p> <p>OR</p> <p>The student may interpret the phrase “next year” as meaning the year 2008, in which case the following are acceptable.</p> 1 point: Correct answer: 40. AND 1 point: Correct explanation (or equivalent). Ex: <ul style="list-style-type: none"> • $25 + 15 = \#$ • “It went up by 5 every year so add 5 plus 5 plus 5 plus 25 equals #.”

PART II Released Science Items—2007 Benchmark Grade 5**SCIENCE OPEN-RESPONSE ITEM B**

- B.** A cooperative learning team has been given the task of classifying the list of Arkansas animals below as either vertebrates or invertebrates. The information needs to be organized in table form so that it can be included in the team's presentation to its science class.

ant	bumblebee	earthworm	rattlesnake
bass	clams	leech	snail
bat	coyote	opossum	turtle
bullfrog	crawfish	raccoon	wasp

1. Construct a two-column table that classifies the animals as either vertebrates or invertebrates. The table must have an appropriate title and both columns must be properly labeled.
2. Explain the differences between vertebrates and invertebrates.

BE SURE TO LABEL YOUR RESPONSES 1 AND 2.

RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM B

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect statements. The table includes a title.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown. Ex: Reversal of the definitions.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Science Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points																				
1	<p>3 points possible</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th colspan="2">Arkansas Animals</th></tr> <tr> <th>Invertebrates</th><th>Vertebrates</th></tr> <tr> <td>ant</td><td>bass</td></tr> <tr> <td>bumblebee</td><td>bat</td></tr> <tr> <td>crawfish</td><td>bullfrog</td></tr> <tr> <td>earthworm</td><td>coyote</td></tr> <tr> <td>leech</td><td>opossum</td></tr> <tr> <td>clams</td><td>raccoon</td></tr> <tr> <td>snail</td><td>rattlesnake</td></tr> <tr> <td>wasp</td><td>turtle</td></tr> </table> <p>3 points: All 16 animals are classified correctly. Title is required for a score of 4.</p> <p>OR</p> <p>2 points: 13 to 15 animals are classified correctly.</p> <p>OR</p> <p>1 point: 9 to 12 animals are classified correctly.</p>	Arkansas Animals		Invertebrates	Vertebrates	ant	bass	bumblebee	bat	crawfish	bullfrog	earthworm	coyote	leech	opossum	clams	raccoon	snail	rattlesnake	wasp	turtle
Arkansas Animals																					
Invertebrates	Vertebrates																				
ant	bass																				
bumblebee	bat																				
crawfish	bullfrog																				
earthworm	coyote																				
leech	opossum																				
clams	raccoon																				
snail	rattlesnake																				
wasp	turtle																				
2	<p>1 point possible</p> <p style="text-align: center;">Correct definitions</p> <p>½ point: “Invertebrates are animals without a backbone/spine.”</p> <p>AND</p> <p>½ point: “Vertebrates are animals with a backbone/spine.”</p>																				

PART II Released Science Items—2007 Benchmark Grade 5

SCIENCE OPEN-RESPONSE ITEM C

- C. As a star, the Sun shares many similarities with other stars. However, there are some significant differences between the Sun and other stars. Compare and contrast the Sun to other stars.
1. Scientists use the colors yellow, red, and blue to determine a star's temperature. List these types of stars in order from hottest to coolest.
 2. Where does the Sun fall in this color classification?
 3. Name the three physical factors that determine a star's brightness, as viewed from Earth.
 4. Explain why the Sun appears to be bigger and brighter than the other stars.

BE SURE TO LABEL YOUR RESPONSES 1, 2, 3, AND 4.

RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM C

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect statements.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Science Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points
1	<p>1 point possible</p> <p>1 point: Correct answer: blue, yellow, red (must be in the correct order).</p> <p>OR</p> <p>½ point: Incomplete answer: Any combination with blue being first, or yellow being second, or red being third. <u>OR</u> Blue as the only answer.</p>
2	<p>1 point possible</p> <p>1 point: Correct answer: yellow, or correct indication of “yellow” based on Part 1 answer (Ex: “middle”).</p>
3	<p>1 point possible</p> <p>1 point: Correct answer: size, temperature (or color), and distance from the Earth.</p> <p>OR</p> <p>½ point: Incomplete answer: student lists 1–2 of the above factors.</p>
4	<p>1 point possible</p> <p>1 point: Correct answer or equivalent: “The sun is closer to the earth than any other star.”</p>

PART II Released Science Items—2007 Benchmark Grade 5

SCIENCE OPEN-RESPONSE ITEM D

- D. The table below shows laboratory observations made while testing various items for chemical and physical changes.

Experiment Number	Item	Observations Before	Action	Observations during Action and/or After
1	paper	paper is white, rectangular-shaped, smooth, and flat	paper is cut into four pieces	paper still white but smaller, smooth, flat
2	water and salt	water is clear liquid and tasteless; salt is whitish, cube-shaped, salty tasting	combined water and salt in a cup and stirred	clear, salty tasting, wet
3	baking soda and vinegar	baking soda is white, powdery, and bitter tasting; vinegar is clear liquid, strong odor, and bitter tasting	combined baking soda and vinegar on a plate	combination bubbled
4	water	water is clear liquid and tasteless	water is heated to boiling point	water boiled producing steam
5	water	water is clear liquid and tasteless	water is poured into ice cube trays, then placed in the freezer	water froze into a solid that was cloudy

1. Identify the items that underwent physical changes.
2. How do you know experiment number 5 is a physical change?
3. If given the right equipment and resources, choose one of the experiments and explain how you could reverse all physical changes.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

RUBRIC FOR SCIENCE OPEN-RESPONSE ITEM D

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect statements.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown. Ex: In Part 2 the student responds, “The water freezes.” No credit in any part.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of “B” will be reported as “NA.” (No attempt to answer the item. Score of “0” assigned for the item.)

PART II Released Science Items—2007 Benchmark Grade 5

Solution and Scoring

Part	Points
1	<p>2 points possible</p> <p>2 points: Correct answers: 1, 2, 4, 5 (½ point for each correct answer).</p> <p>OR</p> <p>2 points: Correct answers: paper, water, salt.</p> <p>OR</p> <p>1 point: Incomplete answer: 2 correct answers.</p> <p>OR</p> <p>½ point: Incomplete answer: 1 correct answer.</p> <p>Note: If the response includes an incorrect item, (baking soda, vinegar, or item #3) <u>NO</u> points are awarded for part 1.</p>
2	<p>1 point possible</p> <p>1 point: Correct explanation.</p> <p>Ex:</p> <ul style="list-style-type: none"> • “The water did not become a new substance, only its appearance changed.” • “It changed from a liquid to a solid.” (it only changed state) • “The water turned into a solid.” • “The ice can melt back into a liquid.” (the process is reversible)
3	<p>1 point possible</p> <p>1 point: Correct explanation (explanations will vary).</p> <p>Ex:</p> <ul style="list-style-type: none"> • Item 1: “The paper could be glued back together into a single piece.” • Item 2: “The water could be evaporated leaving just the salt.” • Item 4: “The steam could be condensed back into a liquid.” • Item 5: “The ice could be heated.”

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

The Arkansas *Mathematics Curriculum Framework**

Strands	Content Standards	Student Learning Expectations
1—NUMBERS AND OPERATIONS (NO)	1. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<p>1. Use models and visual representations to develop the concepts of the following.</p> <p><u>Fractions:</u></p> <ul style="list-style-type: none"> • parts of whole units • parts of a collection • locations on number lines • locations on rulers (benchmark fractions) • divisions of whole numbers <p><u>Ratios:</u></p> <ul style="list-style-type: none"> • part-to-part (2 boys to 3 girls) • part-to-whole (2 boys to 5 people) <p><u>Percents:</u></p> <ul style="list-style-type: none"> • part-to-100 <p>2. Develop understanding of decimal-place value, using models.</p> <p>6. Use models to differentiate between perfect squares, up to 100, and other numbers.</p>
	2. Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another.	<p>1. Use divisibility rules to determine if a number is a factor of another number (2, 3, 5, 10).</p> <p>2. Identify commutative and associative properties.</p>
	3. Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.	<p>1. Develop and use a variety of algorithms, with computational fluency, to perform whole number operations using addition and subtraction (up to five-digit numbers), multiplication (up to three-digit by two-digit), and division (up to two-digit divisor), interpreting remainders, including real-world problems.</p> <p>2. Develop and use algorithms:</p> <ul style="list-style-type: none"> • to add and subtract numbers containing decimals (up to the thousandths place). • to multiply decimals (hundredths by tenths). • to divide decimals by whole number divisors. • to add and subtract fractions with like denominators. <p>3. Solve, with and without appropriate technology, two-step problems, using a variety of methods and tools (i.e. objects, mental computation, paper and pencil).</p> <p>4. Develop and use strategies to estimate the results of whole number computations and to judge the reasonableness of such results.</p>
2—ALGEBRA (A)	4. Patterns, Relations, and Functions: Students shall recognize, describe, and develop patterns, relations, and functions.	<p>1. Solve problems by finding the next term or missing term in a pattern or function table, using real-world situations.</p> <p>2. Interpret and write a rule for a one-operation function table. Ex. adding 3</p>
	5. Algebraic Representations: Students shall represent and analyze mathematical situations and structures, using algebraic symbols.	<p>1. Model and solve simple equations by informal methods, using manipulatives and appropriate technology.</p> <p>2. Write expressions containing one variable (a letter representing an unknown quantity), using rules for addition and subtraction.</p>

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

The Arkansas *Mathematics Curriculum Framework** (continued)

Strands	Content Standards	Student Learning Expectations
3—GEOMETRY (G)	8. Geometric Properties: Students shall analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	<ol style="list-style-type: none"> 1. Identify and model regular and irregular polygons, including decagons. 2. Identify and draw congruent, adjacent, obtuse, acute, right, and straight angles (label parts of an angle: vertex, rays, interior, and exterior). 3. Model and identify circle, radius, diameter, center, circumference, and chord. 4. Model and identify the properties of congruent figures.
	10. Coordinate Geometry: Students shall specify locations and describe spatial relationships, using coordinate geometry and other representational systems.	<ol style="list-style-type: none"> 1. Use geometric vocabulary (horizontal/x-axis, vertical/y-axis, ordered pairs) to describe the location and plot points in Quadrant I.
	11. Visualization and Geometric Models: Students shall use visualization, spatial reasoning, and geometric modeling.	<ol style="list-style-type: none"> 1. Using grid paper, draw and identify two-dimensional patterns (nets) for cubes.
4—MEASUREMENT (M)	12. Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects.	<ol style="list-style-type: none"> 1. Identify and select appropriate units and tools to measure. Ex. angles with degrees, distance with feet 2. Make conversions within the customary measurement system in real-world problems. Ex. hours to minutes, feet to inches, quarts to gallons, etc. 4. Understand when to use linear units to describe perimeter, square units to describe area or surface area, and cubic units to describe volume, in real-world situations.
	13. Systems of Measurement: Students shall identify and use units, systems, and processes of measurement.	<ol style="list-style-type: none"> 4. Develop and use strategies to solve real-world problems involving perimeter and area of rectangles. 6. Use benchmark angles to estimate the measure of angles. Ex. 45 degrees, 90 degrees, 120 degrees, 180 degrees
5—DATA ANALYSIS AND PROBABILITY (DAP)	15. Data Analysis: Students shall select and use appropriate statistical methods to analyze data.	<ol style="list-style-type: none"> 2. Determine, with and without appropriate technology, the range, mean, median, and mode (whole number data sets), and explain what each indicates about the set of data.
	17. Probability: Students shall understand and apply basic concepts of probability.	<ol style="list-style-type: none"> 1. Identify and predict the probability of events within a simple experiment. 2. List and explain all possible outcomes in a given situation.

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

Released Items for Mathematics*

Strands	Content Standards
1—NUMBERS AND OPERATIONS (NO)	1. Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers, and number systems. 2. Properties of Number Operations: Students shall understand meanings of operations and how they relate to one another. 3. Numerical Operations and Estimation: Students shall compute fluently and make reasonable estimates.
2—ALGEBRA (A)	4. Patterns, Relations, and Functions: Students shall recognize, describe, and develop patterns, relations, and functions. 5. Algebraic Representations: Students shall represent and analyze mathematical situations and structures, using algebraic symbols.
3—GEOMETRY (G)	8. Geometric Properties: Students shall analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships. 10. Coordinate Geometry: Students shall specify locations and describe spatial relationships, using coordinate geometry and other representational systems. 11. Visualization and Geometric Models: Students shall use visualization, spatial reasoning, and geometric modeling.
4—MEASUREMENT (M)	12. Physical Attributes: Students shall use attributes of measurement to describe and compare mathematical and real-world objects. 13. Systems of Measurement: Students shall identify and use units, systems, and processes of measurement.
5—DATA ANALYSIS AND PROBABILITY (DAP)	15. Data Analysis: Students shall select and use appropriate statistical methods to analyze data. 17. Probability: Students shall understand and apply basic concepts of probability.

Item	Strand	Content Standard	Student Learning Expectation
1	A	5	1
2	A	5	2
3	M	12	1
4	G	8	2
5	A	5	1
6	NO	1	2
7	G	8	2
8	DAP	17	1
9	M	13	6
10	G	8	4
11	DAP	17	1
12	NO	2	1
13	A	4	1
14	A	4	1
15	G	8	1
16	M	12	4
17	NO	3	2
18	DAP	15	2
19	M	13	6
20	NO	3	4
21	A	4	2
22	G	8	3
23	DAP	15	2

Item	Strand	Content Standard	Student Learning Expectation
24	A	5	1
25	NO	1	1
26	NO	3	1
27	DAP	17	2
28	M	13	6
29	G	10	1
30	DAP	17	2
31	M	13	6
32	M	13	4
33	G	11	1
34	A	4	2
35	M	13	4
36	G	11	1
37	NO	2	2
38	DAP	15	2
39	NO	3	3
40	DAP	17	1
A	A	5	1
B	DAP	17	1
C	G	10	1
D	NO	1	6
E	M	12	2

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

The Arkansas English Language Arts Framework—Reading Strand*

Content Standards	Student Learning Expectations
9. Comprehension: Students shall apply a variety of strategies to read and comprehend printed material.	1. Use previewing, activating prior knowledge, predicting content of text, formulating questions, and establishing purposes for reading. 6. Connect own background knowledge and personal experience to make inferences and to respond to new information presented in text. 7. Make inferences supported by a character's thoughts, words and actions, or the narrator's description. 8. Analyze literary elements of character, plot, and setting. 11. Use such comprehension strategies as establishing purpose, inferring, and summarizing, to determine essential information. 12. Identify main ideas and supporting evidence in short reading passages. 13. Use the text features to locate and recall information, with emphasis on fonts/effects and illustrations/photographs. 16. Scan materials to locate specific information. 20. Evaluate a character's decision/action.
10. Variety of Texts: Students shall read, examine, and respond to a wide range of texts for a variety of purposes.	4. Read a variety of informational text, including textbooks, newspapers, magazines, and other instructional materials. 5. Identify cause/effect and problem/solution relationships.
11. Vocabulary, Word Study, and Fluency: Students shall acquire and apply skills in vocabulary development and word analysis to be able to read fluently.	4. Use knowledge of root words and affixes and word relationships to determine meaning. 5. Use context to determine meaning of multiple-meaning words. 10. Use context clues to select appropriate dictionary definitions.

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

Released Items for Reading*

Item	Content Standard	Student Learning Expectation	Passage Type
1	9	20	Literary
2	9	11	Literary
3	11	4	Literary
4	9	1	Literary
5	9	7	Literary
6	11	10	Literary
7	11	10	Literary
8	9	12	Literary
A	9	8	Literary
9	9	7	Content
10	10	4	Content
11	9	12	Content
12	9	12	Content
13	11	5	Content

Item	Content Standard	Student Learning Expectation	Passage Type
14	9	16	Content
15	10	4	Content
16	11	10	Content
B	9	6	Content
17	9	11	Practical
18	10	5	Practical
19	10	4	Practical
20	9	13	Practical
21	9	7	Practical
22	9	16	Practical
23	11	4	Practical
24	9	16	Practical
C	9	12	Practical

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

The Arkansas *English Language Arts Curriculum Framework—Writing Strand**

Content Standards	Student Learning Expectations
4. Process: Students shall employ a wide range of strategies as they write and use different writing process elements appropriately.	<p>6. Organize expository paragraphs that include a topic sentence, supporting details, and a concluding sentence.</p> <p>11. Edit individually or in groups for appropriate grade-level conventions within the following features.</p> <ul style="list-style-type: none"> • Sentence formation <ul style="list-style-type: none"> – completeness – absence of fused sentences – expansion through standard coordination and modifiers – embedding through standard subordination and modifiers – standard word order • Usage <ul style="list-style-type: none"> – standard inflections – agreement – word meaning – conventions • Mechanics <ul style="list-style-type: none"> – capitalization – punctuation – formatting – spelling
5. Purposes, Topics, Forms, and Audiences: Students shall demonstrate competency in writing for a variety of purposes, topics, and audiences, employing a wide range of forms.	<p>3. Create expository, narrative, descriptive, and persuasive writings.</p> <p>4. Write poems using a variety of techniques/devices, with emphasis on writing patterned and rhymed poetry.</p>
6. Conventions: Students shall apply knowledge of Standard English conventions in written work.	<p>1. Use a variety of simple and compound sentences of varied lengths.</p> <p>2. Use different kinds of sentences:</p> <ul style="list-style-type: none"> • declarative • interrogative • imperative • exclamatory
7. Craftsmanship: Students shall develop personal style and voice as they approach the craftsmanship of writing.	<p>3. Use transition words.</p> <p>6. Use logical sequence.</p>

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

Released Items for Writing*

Item	Content Standard	Student Learning Expectation
1	7	6
2	5	4
3	5	3
4	4	6
5	7	3
6	6	2
7	6	1
8	4	11

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

The Arkansas Science Curriculum Framework*

Strands	Content Standards	Student Learning Expectations
1— PHYSICAL SYSTEMS (PS)	1. Students will demonstrate an understanding of physical systems as a process of inquiry.	2. Understand that a scientific theory is based on current, accepted evidence and is used to make predictions. 4. Interpret scientific information from graphs and charts.
	2. Students will explore, demonstrate, communicate, apply, and evaluate the knowledge of physical systems.	1. Demonstrate an understanding of the states of matter and describe the various combinations of matter (mixtures and compounds). 2. Identify and describe the properties of an atom. 4. Experiment and identify physical and chemical changes. 8. Demonstrate and communicate the relationship between magnetic fields and electric currents. 9. Introduce the electromagnetic spectrum (radio, infrared, visible light, ultraviolet waves, and x-rays.)
	3. Students will demonstrate an understanding of the connections and applications of physical science.	1. Design and conduct different kinds of scientific investigations to answer different kinds of questions. 3. Apply multiple strategies to problem solving.
2— LIFE SCIENCE SYSTEMS (LS)	1. Students will demonstrate an understanding of life science as a process of inquiry.	1. Recognize that science deals only with inquiry about the natural world. 3. Conduct investigative science through use of the scientific method. 4. Generate conclusions based on evidence acquired through experimentation.
	2. Students will explore, demonstrate, communicate, apply, and evaluate the knowledge of life systems.	2. Describe similarities and differences between single-celled and multicellular organisms. 3. Arrange organisms into groups according to similarities and differences. 5. Explain life cycles of various organisms. 6. Describe the parts of the human body systems and determine their function. 12. Evaluate human impact on the environment.
	3. Students will demonstrate an understanding of the connections and applications in life sciences.	3. Apply multiple strategies to problem solving.
3— EARTH/SPACE SYSTEMS (ES)	1. Students will demonstrate an understanding of the inquiry process through the study of Earth and space systems.	2. Understand that Earth and objects in space constantly undergo changes and/or cycles which can be observed and measured. 3. Generate conclusions based on evidence acquired through experimentation. 4. Interpret scientific information from graphs and charts. 5. Identify and classify rocks and minerals.
	2. Students will explore, demonstrate, communicate, apply, and evaluate knowledge of the properties of Earth and space systems.	3. Investigate how Earth's internal processes affect external features (volcanoes, earthquakes, mountain formation, etc.). 4. Understand the effects of weathering and erosion on the Earth's surface. 7. Explain and illustrate the water cycle. 11. Compare the ability to support life on Earth and other objects in space. 12. Explain and compare the properties (gravity, size, shape, distance, and color) of objects in the solar system. 14. Relate the physical characteristics of the Sun to other stars.
	3. Students will demonstrate an understanding of the connections and applications of Earth/space systems.	1. Design and conduct scientific investigations to answer different kinds of questions. 5. Construct models of earth-science systems and make real-world applications. 9. Measure weather conditions using appropriate equipment.

Because the science items were created prior to the adoption of the 2005 revision of the Science Curriculum Framework, they are correlated to the 1999 framework document.

*The Content Standards and Student Learning Expectations listed are those that specifically relate to the released test items in this booklet.

PART III Item Correlation with Curriculum Frameworks—2007 Benchmark Grade 5

Released Items for Science*

Strands	Content Standards
1— PHYSICAL SYSTEMS (PS)	<ol style="list-style-type: none"> Students will demonstrate an understanding of physical systems as a process of inquiry. Students will explore, demonstrate, communicate, apply, and evaluate the knowledge of physical systems. Students will demonstrate an understanding of the connections and applications of physical science.
2— LIFE SCIENCE SYSTEMS (LS)	<ol style="list-style-type: none"> Students will demonstrate an understanding of life science as a process of inquiry. Students will explore, demonstrate, communicate, apply, and evaluate the knowledge of life systems. Students will demonstrate an understanding of the connections and applications in life sciences.
3— EARTH/SPACE SYSTEMS (ES)	<ol style="list-style-type: none"> Students will demonstrate an understanding of the inquiry process through the study of Earth and space systems. Students will explore, demonstrate, communicate, apply, and evaluate knowledge of the properties of Earth and space systems. Students will demonstrate an understanding of the connections and applications of Earth/space systems.

Item	Strand	Content Standard	Student Learning Expectation
1	ES	1	2
2	LS	1	3
3	PS	1	2
4	ES	1	5
5	LS	1	1
6	ES	2	3
7	PS	2	1
8	ES	2	14
9	PS	2	2
10	ES	2	7
11	PS	2	1
12	LS	1	4
13	ES	2	4
14	LS	2	2
15	PS	2	4
16	ES	2	4
17	LS	2	3
18	PS	2	4
19	ES	2	11
20	LS	2	3
21	PS	2	8
22	PS	1	4

Item	Strand	Content Standard	Student Learning Expectation
23	PS	2	9
24	ES	2	12
25	ES	2	7
26	LS	2	3
27	PS	2	1
28	LS	2	5
29	LS	1	4
30	LS	2	6
31	ES	1	2
32	LS	3	3
33	ES	3	1
34	ES	3	9
35	PS	3	1
36	PS	2	9
37	LS	2	12
38	PS	3	3
39	ES	1	3
40	ES	3	5
A	ES	1	4
B	LS	2	3
C	ES	2	14
D	PS	2	4

*Only the predominant Strand, Content Standard, and Student Learning Expectation is listed.



Arkansas Comprehensive Testing, Assessment, and Accountability Program

DEVELOPED FOR THE ARKANSAS DEPARTMENT OF EDUCATION, LITTLE ROCK, AR 72201